

CLAIMS

1. (Currently Amended) A device for measuring vibration in an article having a rotating member, the device comprising:
 - a motion sensitive transducer attachable to the article comprising an output producing a ~~time domain~~ an analog signal in response to the vibration;
 - an analog-to-digital data acquisition member comprising an input connected to the transducer output for sampling the transducer signal and comprising an output producing a ~~time domain~~ digital signal from the sampling;
 - ~~a timing an optic sensor, responsive to a target feature on the rotating member, adapted to detect an instantaneous speed of the rotating member and trigger triggering the data acquisition member to begin sampling when the rotating member is rotating; and~~
 - a processor comprising an input connected to the data acquisition member output for ~~processing translating the time-domain digital signal to a frequency domain digital signal and determining the magnitude and phase of the vibration signal at a frequency associated with the instantaneous speed of the rotating member.~~
2. (Currently Amended) The device of claim 1 wherein the processor further ~~comprises a comparator determining determines whether a~~ the magnitude of the vibration signal at a the frequency associated with the instantaneous speed of the rotating member is greater than a preselected threshold.
3. (Currently Amended) The device of claim 1 wherein the instantaneous speed is associated with a transient start up state of the article's rotating member and is less than an the operating speed of the rotating member.

4. (Original) The device of claim 1 comprising two transducers producing simultaneous vibration signals from different planes.

5. (Original) The device of claim 4 wherein the transducers are positioned orthogonally.

6. (Canceled).

7. (Currently Amended) The device of claim 1 wherein the processor performs a Fourier transform in translating the digital signal from a the time domain to a the frequency domain.

8 - 20. (Canceled)